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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,236	12/15/2003	Roger R. Lesieur	C-2460 DIV	8626
7590	10/18/2006		EXAMINER	
William W. Jones Patent Counsel 6 Juniper Ln Madison, CT 06443			HANDAL, KAITY V	
			ART UNIT	PAPER NUMBER
			1764	

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/734,236	LESIEUR ET AL.
	Examiner Kaity Handal	Art Unit 1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 03 August 2006.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) \_\_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 6-10 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                        | Paper No(s)/Mail Date. _____.                                     |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application |
|   | 6) <input type="checkbox"/> Other: _____.                         |

## DETAILED ACTION

### ***Specification***

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

The Abstract contains language pertaining to a method while the present claims are directed to an apparatus.

### ***Claims Analysis***

1. It is noted that claims 6-10 recite a "system". It has been determined that the claims are directed to an apparatus and the appropriate principles for interpreting claims for that particular category of invention have been applied.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 6-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Examiner asks the question of what the structural feature or element is, if one exists, which differentiates the apparatus or system from any prior art, such that the presence of which causes the product to have a sulfur content of 0.05 ppm as claimed.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Setzer (US 3,485,746) and further in view of Hydrocarbon Chemistry (george A Olah, 1995).

With respect to claims 6-10, Setzer teaches an apparatus (figure 1) for desulfurizing a fuel stream (illustrated) so as to convert the gasoline fuel stream into a low sulfur content fuel (col. 4, lines 59-73), which low sulfur content fuel is suitable

Art Unit: 1764

for use in a fuel processing section in a fuel cell power plant (col. 1, lines 20-25), said system comprising: a) a nickel reactant desulfurization station/reactant adsorbent bed which is operative to convert sulfur contained in organic sulfur compounds contained in the fuel stream (col. 4, lines 59-73); b) means/pump (as illustrated) for introducing a gasoline or diesel fuel stream into said nickel reactant desulfurization station/reactant adsorbent bed, and c) a supply/(from reformer) of a hydrogen ( $H_2$ ) additive and means/pipeline (as illustrated) connecting said ( $H_2$ ) additive supply/reformer to said fuel stream (as illustrated).

Regarding limitations recited in claim 6 which are directed to a manner of operating disclosed device (amount of  $H_2$  additive supplied), neither the manner of operating a disclosed device nor material or article worked upon (such as the type of fuel) further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP § 2114 and 2115. Further, process limitations do not have patentable weight in an apparatus claim. See Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969) that states “Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim.”

The reference does not disclose wherein the  $H_2$  additive is derived from a container of  $H_2$  in the fuel processing section of the fuel cell power plant, from recycled reformed fuel gas from a selective oxidizer in the fuel processing section of the fuel cell power plant, or from an electrolysis cell in the fuel processing section of

the fuel cell power plant which converts water to H<sub>2</sub> and O<sub>2</sub>. The Olah reference discloses the production of hydrogen using fuel cells (page 19, lines 1-15).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the process of Setzer to utilize the fuel cells of Olah and it would have been obvious to utilize a system wherein the H<sub>2</sub> additive is derived from a container of H<sub>2</sub> in the fuel processing section of the fuel cell power plant, from recycled reformed fuel gas from a selective oxidizer in the fuel processing section of the fuel cell power plant, or from an electrolysis cell in the fuel processing section of the fuel cell power plant which converts water to H<sub>2</sub> and O<sub>2</sub> because the Setzer reference generally discloses the use of hydrogen additive in a desulfurization process and the source of the hydrogen production is not material to the success of the process.

### ***Response to Arguments***

#### ***Specification***

Objection made to the Abstract is maintained by the examiner. Examiner kindly points applicant to previous Office Action, Page 2 where item (1) was underlined in order to bring the attention of the applicant to be specific as to what the invention claimed is. The Abstract contains language pertaining to a method but the present claims, as construed, are directed to an apparatus.

Claims Analysis

Applicant indicated that the statement made by the examiner, which states: "a "system" is not a statutory category", is erroneous. Upon further investigation, examiner agrees, however the decision made by the examiner to treat "system" related claims as "apparatus" claims for examination purposes is maintained. Therefore, weight will be given to only structural limitations. See IPXL Holdings LLC v. Amazon.com Inc. which states that: "Apparatus or system, and process or method, are both classes of patent-eligible material and may be claimed in the same patent, but single claim that purports to be drawn to both apparatus and process is ambiguous and properly rejected as indefinite under 35 USC §112.

This leads the examiner to kindly ask the applicant what the structural feature or element is, if one exists, which differentiates the apparatus or system from any prior art, such that the presence of which causes the product to have a sulfur content of 0.05 ppm as claimed. If such an element exists, then it needs to be claimed; otherwise, the apparatus of prior art is capable of producing the desired product as the desired sulfur content constitutes a process limitation. A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus shows all of the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987) Furthermore, "expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim." *Ex parte Thibault*, 164 USPQ 666,667 (Bd. App.

1969). Thus, the “inclusion of material or article worked upon does not impart patentability to the claims.” *In re Young*, 75 F.2d 966, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F.2d 937, 136 (USPQ 458, 459 (CCPA 1963)).

Prior Art Rejection

Applicant requested that examiner points out process/operating limitations as set forth in the prior Office Action rejection of claim 6. Regarding limitations recited in claim 6 which are directed to a manner of operating disclosed device i.e. amount of H<sub>2</sub> additive supplied.

Applicant argues: “there is no suggestion in Setzer that it is capable of achieving an effluent of 0.05 ppm sulfur... and that there is absolutely nothing in Setzer et al that renders obvious the claim limitation in the instant application of said H2 additive being present in said gasoline fuel stream in an amount which is effective to provide an effluent gasoline fuel stream at an exit end of said nickel reactant station which effluent gasoline fuel stream contains no more man about 0.05 ppm sulfur. Furthermore, Setzler et al does not relate to the desulfurization of gasoline.”

Examiner respectfully disagrees. Since it has been determined that the claims are directed to an apparatus and the appropriate principles for interpreting claims for that particular category of invention have been applied, therefore, the apparatus of Setzer reads on the structural limitations as claimed as set forth above and, therefore, is capable of producing the desired sulfur content of 0.05 ppm which constitutes a process limitation. Further, process limitations do not have patentable weight in an apparatus claim. See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states

"Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim." Furthermore, the limitation related to the amount of hydrogen additive supplied and type of fuel which is being treated constitutes a manner of operating the apparatus. A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus shows all of the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987) "expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim." *Ex parte Thibault*, 164 USPQ 666,667 (Bd. App. 1969). Thus, the "inclusion of material or article worked upon does not impart patentability to the claims." *In re Young*, 75 F.2d 966, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F.2d 937, 136 (USPQ 458, 459 (CCPA 1963)).

Applicant argues that Setzer et al does not suggest the derivation of hydrogen for use in its process from recycled reformed fuel gas from a selective oxidizer in the fuel cell power plant; and Setzer et al does not suggest the derivation of hydrogen for use in its process from an electrolysis cell; nor does Setzer et al suggest the derivation of hydrogen from a hydride bed. Examiner respectfully disagrees. The Olah reference was used to teach the production of hydrogen using fuel cells (page 19, lines 1-15).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the process of Setzer to utilize the fuel cells of Olah and it would have been obvious to utilize a system wherein the H<sub>2</sub> additive is derived from a

container of H<sub>2</sub> in the fuel processing section of the fuel cell power plant, from recycled reformed fuel gas from a selective oxidizer in the fuel processing section of the fuel cell power plant, or from an electrolysis cell in the fuel processing section of the fuel cell power plant which converts water to H<sub>2</sub> and O<sub>2</sub> because the Setzer reference generally discloses the use of hydrogen additive in a desulfurization process and the source of the hydrogen production is not material to the success of the process.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaity Handal whose telephone number is (571) 272-8520. The examiner can normally be reached on M-F 8-5.

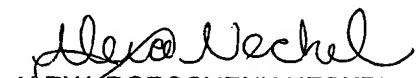
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Calderola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KH  


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10/5/2006

  
ALEXA DOROSHENK NECKEL  
PRIMARY EXAMINER